

**WHAT IS CLAIMED IS:**

1. A variable optical delay line comprising:

a plurality of optical fiber paths, each path comprising at least one reflective element and  
a first region different in curvature from the other paths in the plurality to provide respectively  
5 different optical delay paths; and

a optical switch for switching at least one optical input signal among the fibers of the  
plurality.

2. The delay line of claim 1 wherein the optical switch comprises a MEMs mirror optical  
switch.

10 3. The delay line of claim 1 wherein the at least one reflective element comprises a reflective  
Bragg grating.

4. The delay line of claim 1 wherein the reflective element is switchable between reflection  
and transmission.

5. The delay line of claim 1 wherein each path comprises a second region where the path is  
15 parallel to the other paths in the plurality.

6. The delay line of claim 5 wherein a reflective element in each path comprises a Bragg  
grating formed in the second region.

7. The delay line of claim 1 wherein each path comprises a plurality of refractive elements  
switchable between reflection and transmission.

20 8. The delay line of claim 1 wherein the plurality of optical fiber paths comprise a plurality of  
optical fibers secured to a substrate of sheet material.

9. The delay line of claim 1 wherein the at least one optical input signal is one optical input  
signal and the optical switch comprises a 1XN MEMs mirror optical switch.

10. The delay line of claim 1 wherein the at least one optical input signal comprises a plurality of optical input signals and the optical switch comprises on NXN MEMs mirror optical switch.
11. The delay line of claim 1 wherein the at least one optical input signal comprises a plurality of optical input signals having respectively different wavelengths.